ITEM 554
EROSION CONTROL MATTING

This item shall govern for the furnishing and placing of erosion control mat (ECM)[degradable erosion control blanket (ECB) or synthetic turf reinforcement mat (TRM)] of the size and quantity designated to prevent soil erosion in channels and on steep slopes as shown on the plans and in accordance with these specifications.

GENERAL:

(1) DESCRIPTION: An erosion control mat (ECM) is a degradable erosion control blanket (ECB) designed to hold seed and soil in place until vegetation is established in disturbed areas or is a synthetic turf reinforcement mat (TRM) combining vegetative growth and synthetic materials to form a high-strength mat that helps prevent soil erosion in channels and on steep slopes.

(2) SCHEDULE: Prior to start of construction, submit schedules to the Engineer for accomplishment of temporary and permanent erosion control work included in the construction drawings, as are applicable for clearing and grubbing, grading, and installation of erosion control mat. Also submit a proposed method of erosion and dust control on haul roads and a plan for disposal of waste materials.

(3) CONFLICT: In the event of a conflict between these requirements and storm water pollution control laws, rules or regulations of other Federal, State, or Local agencies. The more restrictive laws, rules or regulations shall apply.

(4) SUBMITTALS**:** The submittal requirements for this specification item shall include:

a. The erosion control matting type.

b. The certified Minimum Average Roll Values (MARV) for physical properties, as derived from quality control testing performed by a Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP) accredited laboratory.

c. Documentation of certifiable, independent large-scale testing which support's Manufacturer's reported product performance properties.

d. One full set of Manufacturer's literature and installation recommendations and any special details necessary for the proposed application.

e. A sample may be required.

MATERIALS:

The ECB and/or TRM supplied shall be materials meeting the requirements of Texas Department of Transportation Standard Specifications For Construction and Maintenance of Highways, Streets, and Bridges (latest edition), Specification Item 169 "Soil Retention Blankets", of the Class and Type as specified on the plans and are on the approved product lists for TxDOT. The sampling, testing and rejection criteria of that specification shall govern.

CONSTRUCTION METHODS:

(1) SITE PREPARATION – ECB'S and TRM'S

a. Grade and compact areas to be treated with rolled erosion control products (RECPs) and compact as indicated or as directed by the Engineer.

b. Remove large rocks, soil clods, vegetation, and other sharp objects (larger than 2" in diameter) that could keep the RECP from intimate contact with subgrade.

c. Prepare seedbed per the manufacturer's recommended guidelines, typically by loosening 2 to 3 in (50 to 75 mm) of soil below final grade. Select and apply soil amendments, fertilizer, and seed required by the Engineer to scarified surface prior to installation of ECB's or TRM's. For soil filled TRM's, the contractor will additionally seed and uniformly soil fill (.5 inches) with live soil on top of the mat, per the manufacturer's installation requirement. Successful preparation of the seedbed will result in 2 to 3 in (50 to 75 mm) of topsoil, Item 515. The Engineer has final determination of whether or not the soil is "live." If in situ soil is not "live", "live" soil will be imported as approved by the Engineer.

d. Construct anchor trench at upgrade end of installation to inhibit undermining from stray surface water. If required by the manufacturer, excavate 6 in x 6 in (150 x 150 mm) check slots at 25 to 30 feet (7.6 to 9.1 meters) intervals along length of channel. Cut longitudinal anchor slots at top of each side slope. All material to be installed per the product manufacturer's installation guide.

(2) INSTALLATION – ECBS and TRMs
A mandatory pre-construction conference with a qualified representative of the TRM Manufacturer, contractor, and inspector must be completed. The conference to be scheduled by the contractor with at least one week's notice to all parties involved. Representatives may be required to be on site for installation assistance. The following installation details are the minimums required. The installation details provided by the manufacturer will control the RECP installation.

a. Install the RECP at elevation and alignment indicated.

b. Secure RECP to channel bottom with ground anchoring devices at a frequency designated by the TRM manufacturer based on individual design parameters. Anchoring frequency is specific for different applications and should be designated by the manufacturer's installation guide. Anchor sizes and types should meet the requirements of the TRM manufacturer.

c. At the discretion of the manufacturer, certain TRM's need to be soil filled to improve vegetative establishment and performance. If required by the manufacturer, after seeding, spread and lightly rake ½" of fine topsoil into the TRM. Smooth soil fill in order to just expose top of TRM. Do not place excessive soil above mat.

d. At the Engineer's discretion a manufacturer's designated representative shall be on site for installation assistance.

e. Any installation of angular placement, overlapping around curves, or modified placement methods must be detailed on the construction drawings. A variance may be allowed for these types of installations if the manufacturer supplies the Engineer with alternate installation details.

f. The City Engineer must approve alternate installation methods prior to execution.

(3) IRRIGATION, MOWING AND PROJECT ACCEPTANCE
Prior to project acceptance by the Engineer, it shall be the responsibility of the contractor to establish a minimum of 70% of the area seeded shall be covered with the specified vegetation with no bare or dead spots greater than 10 square feet. The contractor shall be responsible to set up and maintain temporary irrigation, as required, to assist in establishment of vegetation. All areas that erode prior to project acceptance shall be repaired at the expense of the contractor including necessary reseeding, watering, and repair of the RECP. Seeded areas shall not be mowed prior to establishment of 70% vegetative density and a minimum grass growth of 3 inches. Mower height shall not be set lower than 3 inches. Throughout the duration of the project, the contractor shall be responsible for mowing to facilitate growth and shall not let the vegetation in the seeded areas exceed 18 in. In addition, the Contractor shall water all grassed areas as often as necessary to establish satisfactory growth and to maintain its growth throughout the duration of the project.

MEASUREMENT: Measurement of erosion control matting will be made by the square yard of surface area covered, complete in place and ready for use as an erosion control surface treatment. (Erosion Control Matting necessary for anchorage trenches, overlaps and waste is subsidiary to the design surface area.).

PAYMENT: Erosion control matting, measured as herein specified, will be paid for at the unit Price bid per square yard, which payment shall include furnishing all materials (including topsoil amendment, fertilizer, seed, and material for anchorage trenches, overlaps and waste), labor, and equipment necessary to provide a complete and finished installation as specified.

BID ITEM:
Item 554: Erosion Control Matting per Square Yard [Square Meter]